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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,431	10/02/2000	Andreas Klug	112740-112	8643

29177 7590 09/09/2005	EXAMINER
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CHICAGO, IL 60690-1135	ART UNIT	PAPER NUMBER
	2662	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/647,431	KLUG, ANDREAS
	Examiner	Art Unit
	Donald L. Mills	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 June 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>11-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Irwin

(5,862,136).

Regarding claims 11 and 20, Irwin discloses a telecommunications apparatus and method

for transporting isochronous and asynchronous units over an outgoing TDM stream, which

comprises:

Offering a fixed data pattern (Referring to Figure 6, idle coded octets. See column 15,

lines 48 and 49;)

*Transmitting ATM cells coming from the ATM communication layer into an ATM cell

waiting list* (Referring to Figure 6, ATM cells are received and stored in the asynchronous cell

buffer **460**. See column 15, lines 54-56;)

*Transmitting, on demand, an ATM cell from the ATM waiting list to the requesting time-

division multiplex communication terminal when a respectively oldest control signal represents

the first status and transmitting the fixed data pattern to the requesting time-division multiplex

communication terminal when the oldest control signal represents the second status* (Referring

to Figure 6, ATM cells are passed from the asynchronous cell buffer **460** when indicated by the

read counter **422** to demux **412** for transmission to the end-user and idle cells when there is

surplus bandwidth via reading alternating even and odd DS0 buffers 428 and 429 (first and

second status). See column 15, lines 45-67 and column 16, lines 19-22;) *and*

Deleting the oldest control signal (Referring to Figure 6, read counter **422** has limited

storage capacity thereby removing the oldest control signal. Read counter 422 specifies a DS0

connection memory offset read pointer which defines the next block in the DS0 buffer for

reading out a cell (See column 16, lines 46-48.) Since, the counter specifies an offset value, the

previous offset value is over-written (deleted).)

Irwin does not disclose *generating a control signal sequence with a clock rate*

corresponding to the overall payload cell rate C_{RN} of the N time-division multiplex

communication terminals.

Irwin teaches a method and apparatus for transporting isochronous and synchronous units

over an outgoing TDM stream, which operates by buffering incoming cells for transmission over

outgoing time slots. Thereby, operating ahead of time to transmit ATM cells over time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to implement a control signal sequence in the system of Irwin. One of ordinary skill

in the art at the time of the invention would have been motivated to do so in order to implement a

straight forward method/apparatus for instructing downstream controllers to forward/transmit

cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual

output time. One could have easily used a control sequence to instruct the mechanism to output

cells over time slots since some instrument must be used to determine time slots, and a sequence

or mapping is both straightforward and easy.

Regarding claim 12 as explained in the rejection of claim 11, Irwin teaches all of the claim limitations of claim 11 (parent claim).

Irwin does not disclose *allocating a control signal that represents the first status to each ATM cell of the ATM waiting list in the control signal sequence; carrying out a check, when a new control signal of the control signal sequence is generated in coincidence with the prescribed clock rate to see whether an ATM cell to which no control signal representing the first status is allocated is still present in the ATM waiting list; generating a control signal representing the first status when an ATM cell to which no control signal representing the first status is allocated is still present in the ATM waiting list; and generating a control signal representing the second status when an ATM cell to which no control signal representing the first status is allocated is not present in the ATM waiting list.*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells for transmission over outgoing time slots. Thereby, operating ahead of time to transmit ATM cells over time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a control signal sequence with corresponding status's to represent both active and idle traffic in the system of Irwin. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to implement a straight forward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual output time. One could have easily used a control sequence to instruct the mechanism to output cells over time

slots since some instrument must be used to determine time slots, and a sequence or mapping is both straightforward and easy.

Regarding claim 13 as stated above in the rejection statement of claim 11, Irwin teaches all of the claim limitations of claim 11 (parent claim).

Irwin does not disclose *wherein the control signal representing the first status is represented by a logical "1" and the control signal representing the second status is represented by a logical "0".*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells for transmission over outgoing time slots. Thereby, operating ahead of time to transmit ATM cells over time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a control signal sequence comprising a logical "1" representing an active cell and a logical "0" representing an idle cell in the system of Irwin. One of ordinary skill in the art would have been motivated to so in order to make a clear distinction between the control signals for a straight forward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual output time. One could have easily used a control sequence to instruct the mechanism to output cells over time slots since some instrument must be used to determine time slots, and a sequence or mapping is both straightforward and easy.

Regarding claim 14 as stated above in the rejection statement of claim 11, Irwin teaches all the claim limitations of claim 11 (parent claim).

Irwin does not disclose *wherein the control signal sequence has a length of up to 3•N signals.*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells for transmission over outgoing time slots. Thereby, operating ahead of time to transmit ATM cells over time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a control signal sequence with length 3•N in the system of Irwin. One of ordinary skill in the art would have been motivated to so in order to implement a sequence long enough to account for system delay. And, to act as a straightforward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual output time. One could have easily used a control sequence to instruct the mechanism to output cells over time slots since some instrument must be used to determine time slots, and a sequence or mapping is both straightforward and easy.

Regarding claims 15, 16, and 17 as explained in the rejection of claim 11, Irwin teaches all of the claim limitations of claim 11 (parent claim).

Irwin does not disclose *the method further comprising the step of enabling a cell transmission from the ATM communication layer into the ATM waiting list when the plurality of ATM cells present in the waiting list minus the plurality of control signals of the control signal sequence representing the first status is ≤ X (Claim 15)/wherein X ≥ 1 (Claim 16)/wherein X = 1 (Claim 17).*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells (waiting list) for transmission over outgoing time slots. Thereby, operating ahead of time to transmit ATM cells over time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a control signal sequence and preventing buffer overflow based on the difference between the number of buffered cells and scheduled cells being less than or equal to one. One of ordinary skill in the art would have been motivated to so in order to implement a straight forward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots and to prevent buffer overflow by ensuring the transmission rate is equivalent to the reception rate. And, to act as a straightforward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual output time. One could have easily used a control sequence to instruct the mechanism to output cells over time slots since some instrument must be used to determine time slots, and a sequence or mapping is both straightforward and easy.

Regarding claim 18 as explained in the rejection of claim 11, Irwin teaches all of the claim limitations of claim 11 (parent claim).

Irwin does not disclose *wherein the N time-division multiplex terminals are uncorrelated.*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells for transmission over outgoing time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement multiple multiplexers in the system of Irwin. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to implement a system which supports high levels of user traffic. An added benefit of doing so would result in increased provider revenue due to increased traffic capacity.

Regarding claim 19 as explained in the rejection of claim 11, Irwin teaches all of the claim limitations of claim 11.

Irwin does not disclose *the method further comprising the step of dividing the ATM cells and the cells containing the fixed data pattern onto the N communication terminals according to a round-robin method.*

Irwin teaches a method and apparatus for transporting isochronous and synchronous units over an outgoing TDM stream, which operates by buffering incoming cells for transmission over outgoing time slots.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement multiple multiplexers with round-robin selection in the system of Irwin. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to implement a system which supports high levels of user traffic distributed among several multiplexers to avoid system overload. An added benefit of doing so would result in increased provider revenue due to increased traffic capacity.

Response to Arguments

3.   Applicant's arguments filed June 20, 2005 have been fully considered but they are not

persuasive.

Rejection Under 35 U.S.C. § 103

On page 5 of the remarks, regarding claims 11 and 20, the Applicant argues Irwin does

not disclose, teach, or otherwise make obvious *transmitting, on demand, an ATM cell from the*

ATM waiting list to the requesting time-division multiplex communication terminal when a

respectively oldest control signal represents the first status and transmitting the fixed data

pattern to the requesting time-division multiplex communication terminal when the oldest control

signal represents the second status and *deleting the oldest control signal.* The Examiner

respectfully disagrees. Irwin discloses passing ATM cells from the asynchronous cell buffer 460

(ATM waiting list) when indicated by the read counter 422 to demux 412 (requesting time-

division multiplex communication terminal) for transmission to the end-user and idle cells when

there is surplus bandwidth via reading alternating even and odd DS0 buffers 428 and 429 (first

and second status) (See column 15, lines 45-67 and column 16, lines 19-22.) Also, Irwin

discloses read counter 422, which has limited storage capacity thereby removing the oldest

control signal (See Figure 6.) Read counter 422 specifies a DS0 connection memory offset read

pointer which defines the next block in the DS0 buffer for reading out a cell (See column 16,

lines 46-48.) Since, the counter specifies an offset value, the previous offset value is over-

written (deleted). Therefore, Irwin discloses *transmitting, on demand, an ATM cell from the*

ATM waiting list to the requesting time-division multiplex communication terminal when a

respectively oldest control signal represents the first status and transmitting the fixed data

pattern to the requesting time-division multiplex communication terminal when the oldest control signal represents the second status and *deleting the oldest control signal.*

On page 5 of the remarks, regarding claims 11 and 20, the Applicant argues Irwin does not disclose *generating a control signal sequence.* The Examiner respectfully agrees. The Examiner contends that Irwin discloses a control signal with a *first and second status* (as stated above); however, Irwin does not disclose a predefined *control signal sequence.* But, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a "control signal sequence" in the system of Irwin, in other words a sequential order of control signals. One of ordinary skill in the art at the time of the invention would have been motivated to do so in order to implement a straight forward method/apparatus for instructing downstream controllers to forward/transmit cells over specified time slots. Both Irwin and the instant invention operate ahead of the actual output time. One could have easily used a control sequence to instruct the mechanism to output cells over time slots since some instrument must be used to determine time slots, and a sequence or mapping is both straightforward and easy.

On page 6 of the remarks, regarding claims 11 and 20, the Applicant argues Irwin does not disclose *offering a fixed data pattern.* The Examiner respectfully disagrees. Irwin discloses idle coded octets (null octets comprising a null value, therefore, a fixed data pattern) (See column 15, lines 48 and 49.) Therefore, Irwin discloses *offering a fixed data pattern.*

Conclusion

4.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The

examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

JOHN PEZZLO
PRIMARY EXAMINER

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

September 2, 2005